Introduction

With the rapid evolution of the ESG landscape and the regional development plan in China, sustainable development has become a strategic priority of the Greater Bay Area. Through analysing the current green financing landscape in the GBA, as well as new opportunities emerged from the green products market, this report aims to highlight the huge potential for green consumption in this area. In the following sections, a green credit card, together with its features and feasibility would be proposed to the Standard Chartered Bank.

1. ESG landscape in China

1.1 ESG Criteria

The ESG framework helps investors screen their potential investment, by identifying firms that have established sound environmental practices, strong social responsibility tenets, and ethical governance initiatives into their corporate policies and daily operations.[1]

Accordingly, the ESG criteria cover the following aspects: The environmental factor (E) evaluates a company's decisions based on the effect on the environment. The social factor (S) assesses a company's impact on the community in terms of diversity, human rights and healthcare. The governance factor (G) considers the influence of the company's shareholders and directors based on the structure of the board of directors, shareholders' rights and transparency.[2]

Most companies measure their performance according to the ESG metrics and put it in the annual reports and other documents. Sometimes it requires third-party providers such as Bloomberg, MSCI, etc. to measure individual companies' performance.

1.2 ESG development

1.2.1 History

Although ESG integration (Fig. 1) is an intact approach to investment analysis, it is yet to be widespread in China, due to the lack of comparable historic data, understanding of the issues, and company culture around ESG investing. However, China has seen significant growth in awareness of ESG from the issuance of various policies and frameworks, as well as the increase in the number and diversity of green financial products. China is also committed to reaching carbon neutrality by 2060[3].

The submission of the "Enhanced Actions on Climate Change: China's Intended Nationally Determined Contributions[4]" (INDC) (2015) and the ratification of the "Paris Agreement" (2016) marked the start of the ESG reformation in China. In January 2015, the "Measures for the Disclosure of Environmental Information by Enterprises and Public Institution"[5] stipulated the scope for ESG information disclosure. Apart from signing the "Paris Agreement", in 2016, the issuance of the

[1] The Balance, "What Are Environmental, Social, and Governance (ESG) Criteria?"
https://www.thebalance.com/what-are-environmental-social-and-governance-esg-criteria-5112974
[2] Santander Bank, "What are ESG criteria and why are they so important?"
https://www.santander.com/en/stories/what-are-esg-criteria-and-why-are-they-so-important
[3] Climate Home News, "China will aim for carbon neutrality by 2060"
https://www.climatechangenews.com/2020/09/22/xi-jinping-china-will-achieve-carbon-neutrality-2060/
[4] China.org.cn, "Enhanced Actions on Climate Change: China's Intended Nationally Determined Contributions"
http://www.china.org.cn/environment/2015-06/30/content_35950951_5.htm
[5] Ministry of Ecology and Environment of the PRC, "企业事业单位环境信息公开办法"
http://www.mee.gov.cn/gkml/hbb/bl/201412/t20141224_293393.htm

"Guidelines for Establishing the Green Financial System"[6] made China the first country in the world to have established a systematic structure for green finance; later in the same year, the concept of the "Greater Bay Area" was first mentioned in the English version of China's 13th Five-Year Plan[7]. In 2017, The "Framework Agreement on Deepening Guangdong- Hong Kong- Macao Cooperation in the Development of the Bay Area"[8] emphasised on the green development and specialisation of each city. In 2018, more detailed ESG regulatory rules were stated in the "Code of Corporate Governance for listed companies in China"[9], and goals for green investments were set in the "Green Investment Guidelines[10]". In 2020, the "Guangdong-HK-Macao Greater Bay Area Green Finance Alliance"[11] was launched by the HK Green Finance Association, which aims to facilitate the greening of the GBA. Furthermore, the alliance supports the Green Building Project, the Blockchain Solar Project & Carbon Connect in Hong Kong; Research & Practical of Solid Waste Disposal in Shenzhen; and the Green Supply Chain Financing Action Guide in Guangdong.

FIGURE 1: THE ESG INTEGRATION FRAMEWORK

Figure 1 The ESG Integration Framework

1.2.2 Insights in the GBA

[6] People's Bank of China, "关于构建绿色金融体系的指导意见"
http://www.mee.gov.cn/gkml/hbb/gwy/201611/t20161124_368163.htm
[7] Central Committee of the Communist Party of China, "Central Committee of the Communist Party of China"
https://en.ndrc.gov.cn/policyrelease_8233/201612/P020191101482242850325.pdf
[8] National Development and Reform Commission, "Framework Agreement on Deepening Guangdong-Hong Kong-Macao Cooperation in the Development of the Greater Bay Area"
https://www.bayarea.gov.hk/filemanager/en/share/pdf/Framework_Agreement.pdf
9 China Securities Regulatory Commission, "Code of Corporate Governance for Listed Companies"
http://www.csrc.gov.cn/pub/csrc_en/laws/rfdm/DepartmentRules/201804/P020180427400732459560.pdf
[10] Asset Management Association of China, "Green Investment Guidelines(For trial Implementation)"
https://www.amac.org.cn/industrydynamics/guoNeiJiaoLiuDongTai/jjhywhjs/esg/202001/P020200120447423886721.pdf
[11] Hong Kong Green Finance Association, "Greater Bay Area Green Finance Alliance officially launched today"
https://www.hkgreenfinance.org/greater-bay-area-green-finance-alliance-officially-launched-today/

The Greater Bay Area is now the largest and most populated urban area and is among the 5th largest bay areas in the world, comparable with the bay areas of London, New York, San Francisco, and Tokyo.

It consists of nine cities and two special administrative regions in South China, with Hong Kong, Macao, Guangzhou and Shenzhen as the four core cities. Specific development goals for each city are stated in the "Outline Development Plan of the Guangdong-Hong Kong-Macao Greater Bay Area"[12], and the potential investment focus for each city can be found in the "Sustainable Financing in China's Greater Bay Area" reported by HSBC[13]. Fig. 2 below lists the potential project types for each GBA city, which is designated according to the city's major industries. For example, Jiangmen is expected to cover almost all types of the endorsed projects, as its main industries include petrochemicals, packaging and printing, electronic information, food and beverage, transportation and marine equipment, and modern agriculture.

GBA cities	Current major industries
Dongguan	Electronic information, electrical machinery, textiles and apparel, furniture and toys, paper manufacturing and paper products, food and beverage, chemical engineering
Foshan	Mechanical equipment, furniture, lighting, home appliance, ceramics, metal machinery
Guangzhou	Petrochemical industry, automotive manufacturing, manufacturing of electronic products
Hong Kong	Financial services, trading and logistics, advanced service industry, tourism
Huizhou	Electronic information, petrochemical industry, automotive industry and modern service industry
Jiangmen	Petrochemicals, electronic information, packaging and printing, food and beverage, transportation and marine equipment, modern agriculture
Macao	Gambling tourism, financial services, building construction and property development, export and machinery
Shenzhen	Financial services, internet, electronic information, biomedicine, new energy, new materials
Zhaoqing	Metal machinery, electronic information, automobile parts, food and beverage, agriculture, biopharmaceuticals, forest products and chemical engineering
Zhongshan	Electronic appliances, metal machinery and home appliance, lighting, manufacturing of equipment, textiles and apparel, health and medicine
Zhuhai	Electronic information, petrochemicals, home appliances, power and energy generation, manufacturing of precision machines

Source: China Merchants Bank (CMB) International [2018]

Figure 2 Current Major Industries in each GBA city

1.3 ESG Market Analysis

[12] Hong Kong Constitutional and Mainland Affairs Bureau, "Outline Development Plan for the Guangdong-Hong Kong-Macao Greater Bay Area"
https://www.bayarea.gov.hk/en/outline/plan.html
[13] HSBC, "Sustainable Financing in China's Greater Bay Area – Opportunities for Growth"
http://www.hkgaa.org/cmsimg/GBA/HSBC_GBA_Report_EN_20180629.pdf

1.3.1 Existing Products

The existing ESG products can be categorised into three groups – Financial (Green Trust, Green Bonds), Investment (Green Funds, Green Insurance), and Index trading (Carbon trading). The following statistics regarding the ESG-themed financial instrument are quoted from the "ESG Investment in China"[14] report by the Ping An Digital Economic Research Centre (DERC).

Fig. 3 compares the net flows into traditional ETF and ESG-themed ETF in the first two quarters of 2020. For traditional ETF, despite having a general upward trend, the net flows had a wide range of fluctuation. Whereas the ones for ESG-themed ETF had a gradual increase from 3 billion to roughly 25 billion in USD by the end of May 2020.

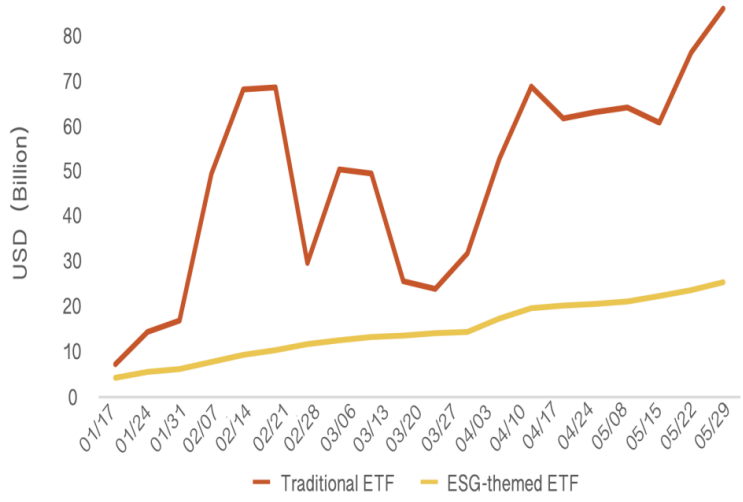
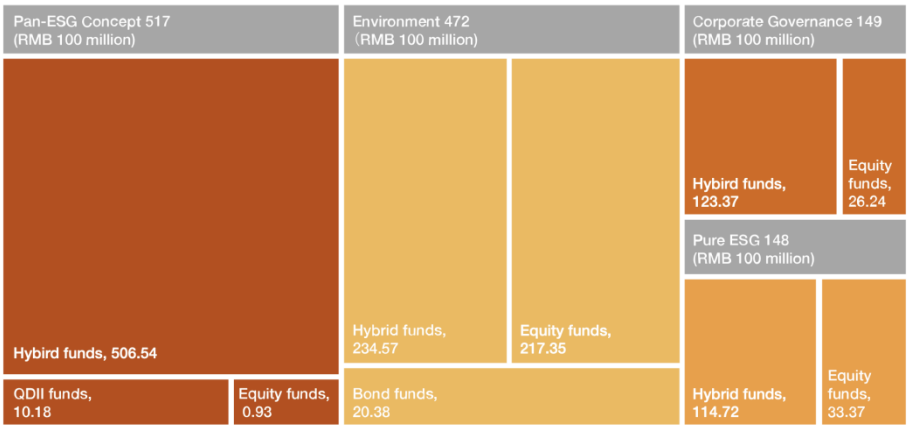


Figure 3 Net Flows into Traditional vs ESG-themed ETFs in the First Half of 2020

Fig. 4 shows the size distribution of ESG fund themes and investment types recorded in Nov 2020. For all themes, hybrid bonds take up the most percentage in the total investment, while equity funds take up much less proportion in every theme other than Environment 472.

[14] Ping An Digital Economic Research Centre, "ESG Report Series Issue 3- ESG Investment in China" https://group.pingan.com/dam/jcr:4519da79-ddc6-483a-ab82-28a59ff6af4a/ESG_%20Investment_%20in_China.pdf



Note: The Pan-Concept Fund China International (QDII) is RMB 1.018 billion and the equity type is RMB 93 million.
Data source: Wind, Ping An Digital Economic Research Center

Figure 4 Size Distribution of ESG Fund Themes and Investment Types

China's ESG fund products have seen two booming periods, one was in 2014-2016, the other in 2019-2020. Compared to the previous period, where the environment sector was much denser than the others, the funds had seen a increasing attention in Pure ESG.

Data source: Wind, Ping An Digital Economic Research Center

Figure 5 Number of Fund Projects in China

1.3.2 Competitor Analysis

Banks play an essential role in the ESG reformation, especially when the Chinese green market is now largely concentrated in the financial sector.

Hong Kong is designated as the centre of financial services, trading and logistics. Thus the Hong Kong Monetary Authority (HKMA) and the Hong Kong Green Finance Association (HKGFA) announced key

measures[15] on sustainable banking and green finance, including 3-phased green and sustainable banking, responsible investment, and the establishment of the Centre for Green Finance (CGF). Besides, Cross-Agency Steering Group launched its strategic plan to strengthen Hong Kong's financial ecosystem, and the "Common Assessment Framework on Green and Sustainable Banking"[16] was issued in May 2020.

HSBC HK, as the best investment bank for sustainability, has its sustainable financing programme, which provides financial support and recognition for customers investing in eco-friendly equipment and adopting a sustainable way of doing business. [17] Features include flexible instalment loans, minimum financing amount of HK$1,000,000, repayment period of up to five years.

Along with the effort centralised in Hong Kong, banks in other cities have also facilitated themselves with various green financial products. For instance, the Industrial Bank of China Guangzhou branch[18] revealed that its green financing had accumulated 150 billion Yuan till June 2020 and that in the next 5 years, the bank would continue exploring in the fields of carbon finance, emission rights, blue bonds, climate bonds, etc.

2. Green Product Market Analysis

2.1 Overview of Credit Card Market

2.1.1 Credit Card Usage

The credit card market is evolving rapidly in recent years, due to urbanisation and the growing consumerism[19] in China.

The Payment System Operations General Report from the People's Bank of China[20] showed that at the end of the third quarter, 766 million credit cards and loan cards were issued. The population holds 6.28 bank cards per capita, of which 0.55 are credit cards. Fig. 6 shows us that the volume of credit cards issued in China has been generally increasing from 2012.

[15] Hong Kong Monetary Authority, "HKMA introduces key measures on sustainable banking and green finance" https://www.hkma.gov.hk/eng/news-and-media/press-releases/2019/05/20190507-4
[16] Hong Kong Monetary Authority, "Common Assessment Framework on Green and Sustainable Banking" https://www.hkma.gov.hk/media/eng/doc/key-information/guidelines-and-circular/2020/20200513e1a1.pdf
[17] HSBC, "Sustainable Financing Programme" https://www.business.hsbc.com.hk/financing-and-credit-cards/commercial-lending/sustainable-financing-programme
[18] Xinhua Net, "兴业银行广州分行拟投千亿支持大湾区绿色金融" http://www.gd.xinhuanet.com/newscenter/2020-04/28/c_1125914165.htm
[19] Mckinsey, "China consumer report 2020: The many faces of the Chinese consumer", https://www.mckinsey.com/featured-insights/china/china-consumer-report-2020-the-many-faces-of-the-chinese-consumer#
[20] People's Bank of China, "2020 年第三季度支付体系运行总体情况" (2020 Q3 Payment System Operations General Report) http://www.pbc.gov.cn/goutongjiaoliu/113456/113469/4133711/2020112609032935245.pdf

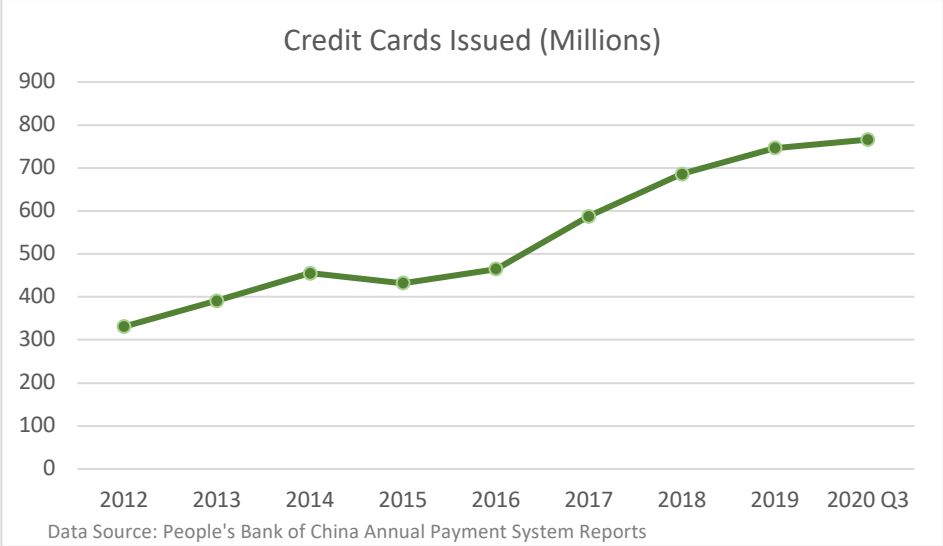


Figure 6 Number of Credit Cards Issued in China

The per capita consumption for bank cards was ¥ 22,000, while the average expenditure per bank cards was ¥ 3503.09. Furthermore, the average expenditure per card per transaction amounted to ¥ 611.47. The average credit limit for bank cards is ¥ 24,300, and the credit utility rate is 41.78%.

2.1.2 Credit Card Interest Rate

Since 2016, China's central bank set the lower limit on interest rates as annualized 12.775%, and the upper limit was at annualized 18.25%[21].

Most commercial banks, including SCB China, are offering 0.05% daily interest rate[22], which is equivalent to 18.25% annual interest rate. SCB China's instalment rate is at annualized 9.88% - 16.43% depending on instalment period.

However, from 1 Jan 2021 onwards, China's central bank removed the upper and lower limits on credit card interest rates[23]. With flexible interest rates, banks will be able to introduce differentiated credit card products and promote consumption.

2.2 Examples of Green Credit Cards

Green credit cards aim to motivate green consumption and raise environmental awareness among the consumers. The common features can be categorised into the following: 1. lower interest rates

[21] People's Bank of China, "中国人民银行关于信用卡业务有关事项的通知" (Announcements about Credit Card Services) http://www.pbc.gov.cn/goutongjiaoliu/113456/113469/3048512/index.html
[22] Standard Chartered China, "渣打银行(中国)有限公司信用卡章程" (SCB Credit Card Terms & Conditions) https://av.sc.com/cn/content/docs/cn-rewards-program-terms-conditions.pdf
[23] People's Bank of China, "中国人民银行关于推进信用卡透支利率市场化改革的通知" (Announcements about Implementing Credit Card Interest Rate Market-Oriented Reform) http://www.pbc.gov.cn/zhengwugongkai/4081330/4081344/4081395/4081686/4159909/index.html

or rebates on selected green products; 2. reward system for green consumption; 3. donation of profit to environmental charities and 4. purchase of carbon emission credits.

Barclays' Breathe card[24]:

- 14.9% representative annual percentage rate (APR) on normal purchases and 5.9% representative APR on rail and bus tickets.
- Offers discounts on select eco-friendly products.
- 50% of its net profits were donated to PURE, a UK based charity that invests in low energy products.
- Balance transfers were at 0% interest for the first 6 months.

Green Credit Card in Korea[25]:

Rewarded with points that are converted into cash or can be donated to environmental funds when used to:

- buy eco-friendly products;
- use public transport;
- make paper-less transactions;
- consume less electricity, water, and gas.

Industrial Bank of China (CIB)'s Low Carbon Credit Card[26]:

- Rewarded 1 Tonne of Voluntary Carbon Emission Reduction (VER) credit with RMB 30,000 spent in first year
- For every transaction made, CIB would donate ¥ 0.01 to purchase VER.

2.3 Green Consumption in China

2.3.1 Green Consumption Trends

From the Green Consumption Reports provided by AliResearch[27] and JD[28], we can see that more consumers are aware of their carbon footprint and environmental impacts.

In 2019, there were more than 380 million people who have purchased green products on Taobao alone. This made up almost half of the total number of Taobao users.

[24] The Guardian, "Barclaycard launches 'green' credit card"
https://www.theguardian.com/money/2007/jul/02/business.creditcards
[25] UNFCCC, "Green Credit Card I Republic of Korea"
https://unfccc.int/climate-action/momentum-for-change/ict-solutions/green-credit-card-i-republic-of-korea
[26] CIB, "Low Carbon Credit Card Details"
http://creditcard.cib.com.cn/apply/products/RTseries/co2.html
[27] AliResearch, "2016 Annual Green Consumers Report"
http://www.199it.com/archives/503427.html
[28] JD Big Data Research Institute, "2019 Green Consumption Development Trends Report"
https://developer.jdcloud.com/jd-industry-news/article/864

The types of green consumer goods have exceeded 100 million on JD. This shows a huge potential market of green consumption. In GBA especially, the proportion of green consumers from Guangdong is the highest among those on JD[29], consisting 14.5%.

Although green products are likely to price higher in the market, consumers in China are willing to spend more on green products. According to a 2017 Sustainable Consumption report published by the China Chain Store & Franchise Association[30], more than 70% of respondents were willing to pay 10% more for sustainable products or services over nonsustainable ones.

2.3.2 Characteristics of Green Consumers

Most reports about green consumption concluded that the younger generations are more willing to purchase green products. Fig. 7 in the Green Consumers Report from AliResearch, shows that among all age groups, those between 22 and 35 years old are more likely to shift their consumption pattern to an eco-friendly one.

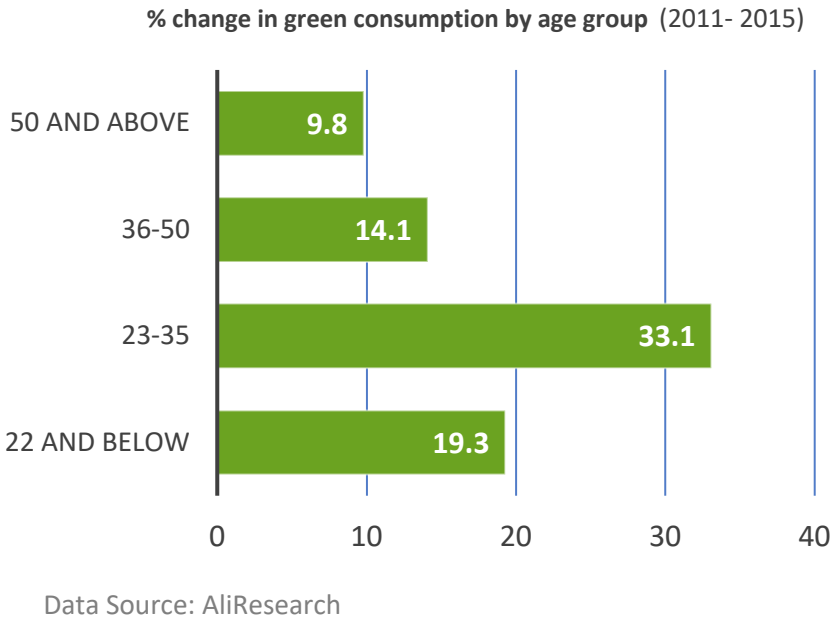


Figure 7. Percentage Change in Green Consumption from 2011 to 2015

The report also provided the figures that 1 in 2 young mothers using Taobao are green consumers. Other researches such as (Li et al. 2019)[31] have found similar results, indicating females usually consume more green products than males. Thus, the target group analysis in the following section would mainly focus on married women under 35.

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[29] JD Big Data Research Institute, "2017 Green Consumption Development Trends Report" https://jdcorporateblog.com/chinese-consumers-embrace-sustainable-consumption/

[30] China Chain Store & Franchise Association, "2017 Sustainable Consumption report" http://www.ccfa.org.cn/portal/cn/xiangxi.jsp?id=432783&type=33

[31] Li et al. (2019), "Does gender inequality affect household green consumption behaviour in China?" https://www.sciencedirect.com/science/article/abs/pii/S0301421519306585

3. Green Credit Card Model[32]

3.1 Target Group Analysis

The following analysis used a dataset provided by China Merchants Bank (CMB) for competition purpose. The dataset covers approximately 40,000 CMB's credit card users. The variables include customers' demographics and credit-related user behaviours. While anonymisation might affect interpretability, it remains practical to identify significant factors that are relevant to credit risks based on this dataset and to predict default risk and profitability subsequently.

3.1.1 Data Description

The dataset contains 43 variables. 17 variables are categorical and 26 are continuous. We transformed the continuous his_lng_ovd_day to a categorical response variable with 0 indicating a Good customer who never defaults, and 1 indicating a Bad customer who has defaulted before.

In exploratory data analysis, we found that married women under 35, our target group, have several characteristics which made them preferred credit card customers:

• 85.9% of them are active credit card users. This is higher than the average level in the dataset which is 84.77%.
• 90.5% of them have downloaded the special app for credit card, significantly higher than the 83.61% in the dataset. This app allows customers to redeem rewards and do interest-free online shopping.
• 3.85% of them have defaulted on any loans, much smaller than the proportion that defaulted in the overall dataset, which is 7.57%.

From these findings we conclude that:

• Our target group is likely to be receptive to a credit card scheme that suits their interests.
• Our target group enjoys the reward ecosystem of a credit card. It would be desirable to design rebate and interest-free shopping for our green credit card.
• Our target group have better credit scores.

3.2 Modelling Credit Score

Credit score reflects the likelihood of a customer to default. We classified our customers into two groups: Good - who never defaults on loans in the past; Bad - who have defaulted in the past. Assigning Good as 1 and Bad as 0, we create a credit score for customers by calculating their likelihood of being Good.

Following industry practices, we first modelled credit score using logistic regression. We followed a backward selection process by removing non-significant variables one by one. Through the logistic model, we found that the following variables are associated with the the likelihood of a customer being Good: academic degree, whether they own a business, consumption amount using credit card in the past year, total asset level, personal loan credit, method to pay off credit card, frequency of purchasing financial products and frequency of purchasing fund. This model achieves relatively good diagnostic ability. The area under the receiver operating characteristic (ROC) curve is 0.963 (Fig. 8).

[32] Github Repository for Credit Card Model
https://github.com/p-8s/LSE-Practitioner-s-Challenge-2021

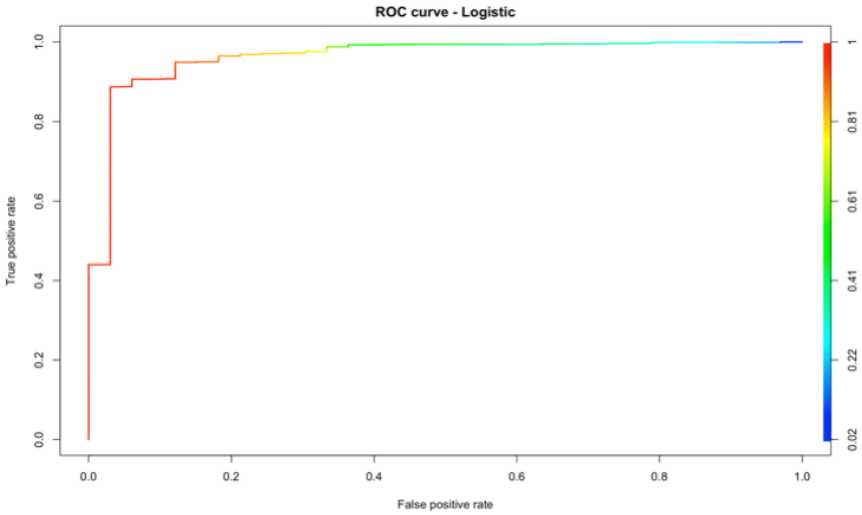

Figure 8 ROC curve for logistic model

In order to achieve higher prediction accuracy, we decided to use random forest to improve classification. The area under ROC curve improves to 1 (Fig. 9). We test its stability by running the model on a test dataset. It is relatively stable judging by the ROC curve (Fig. 10).

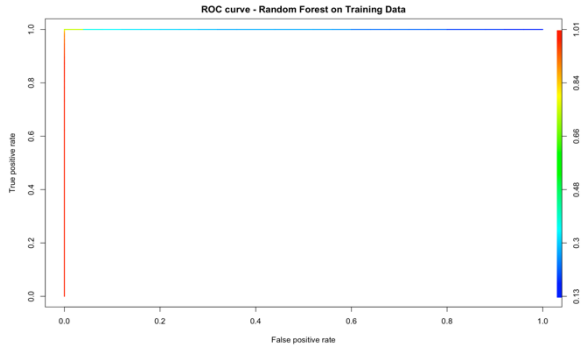

Figure 9 ROC curve for random forest on training data

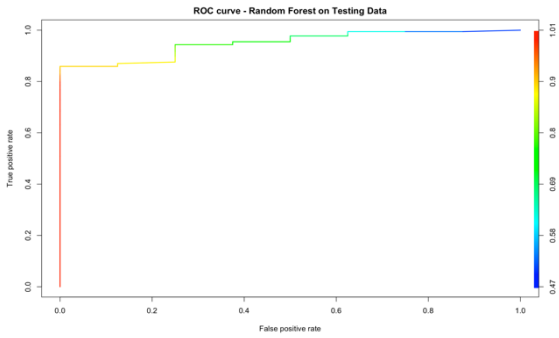

Figure 10 ROC curve for random forest on testing data

3.3 Modelling Profitability

To model profitability, we used the model established by a paper on credit score (So et al., 2013)[33]. It only takes into account of the revenue generated from merchant service charge, m, and interest, r, on the balance. N is defined to be the average number of periods before a purchase of $1 is paid off. The model then makes the following assumptions:

- A customer will always pay off the debt according to the sequence they were generated
- In each period, the sum of average expenditure and interest paid equals the average repayment
- Under assumption of stationarity, the credit score of a customer is translated into a hazard rate p that in any given period they will not default

[33] So et al. (2013), "Using a transactor/revolver scorecard to make credit and pricing decisions" https://www-sciencedirect-com.gate3.library.lse.ac.uk/science/article/pii/S0167923613002625

With these, the profitability model is established as follows. In the period where a purchase is made, the cost of the consumption is subtracted and the merchant service charge is added. Then we add the repayment of the P and the interests incurred on that over N period given that the customer never ever defaults. If the borrower defaults during the N periods, the amount that would be recovered in the collection process is added. The formula for expected profit from an individual in one month is shown as below:

$$e(r,p) = P\left((m-1) + \frac{(1+r)^{N-1}p^N}{(1+r_F)^N} + \frac{(1-l_D)(1+r)^{N-1}\left(1-p^N\right)}{(1+r_F)^N}\right)$$

Here, l_D is percentage final loss of balance at default on credit card and r_F is the interest rate at which lender can borrow money each period.

With this model, we first tried to calculate the current profit earned from our target group.

Firstly, the green credit card would only be offered to customers whose hazard rate is higher than the cut-off level (p*). The optimal probability should satisfy e(r, p*) = 0. We thus calculated p* as 0.9829.

Next, we supplied into the equation relevant statistics as follows,

- merchant service charge, m = 0.8%
  - specified in "China UnionPay's interbank transaction income distribution method"[34]
- interest rate charged per billing period, r = 1.5%
  - common practice among Chinese banks
- interest rate at which lender can borrow money each period, r_F = 0.2%
  - converted annualised interest rate for one-year treasury bonds[35] into monthly interest rate
- percentage final loss of balance at default on credit card[36], l_D = 70%
- average purchase per period using credit card, P = ¥590
  - calculated based on figures from CMB's annual report[37] (CMB, 2019)
- average repayment per period, C = ¥637
  - calculated based on figures from CMB's annual report 2019 (CMB, 2019)
- average balance per period, B = ¥3147
  - calculated based on the assumption rB + P = C

Using the hazard rate modelled from random forest, we calculate the expected profit from each individual who are eligible for the card. Taking the average, we found that the monthly profit from our target group is roughly ¥39.45.

Then, we tried to achieve the same profitability but with different interest rates set on the card. Fitting in different r, we calculated the corresponding consumption amount, P, needed from every individual in order to maintain e(r, p) = ¥39.45. Plotting datapoints calculated for each individual customer, we obtained the relationship between r and P is shown as below (Fig. 11),

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[34] People's Bank of China, "中国银联入网机构银行卡跨行交易收益分配办法"
http://guoqing.china.com.cn/zwxx/2013-01/22/content_27757195.htm
[35] National Interbank Funding Centre, "Treasure Bonds Interest Rate Historical Data"
http://www.chinamoney.com.cn/chinese/sddsintigy
[36] Bank of China, "2019 Report of Credit Adequacy Ratio"
https://www.boc.cn/investor/ir5/202003/t20200327_17685431.html
[37] CMB, "2019 Annual Report"
https://www.cmbchina.com/cmbir/intro.aspx?type=report

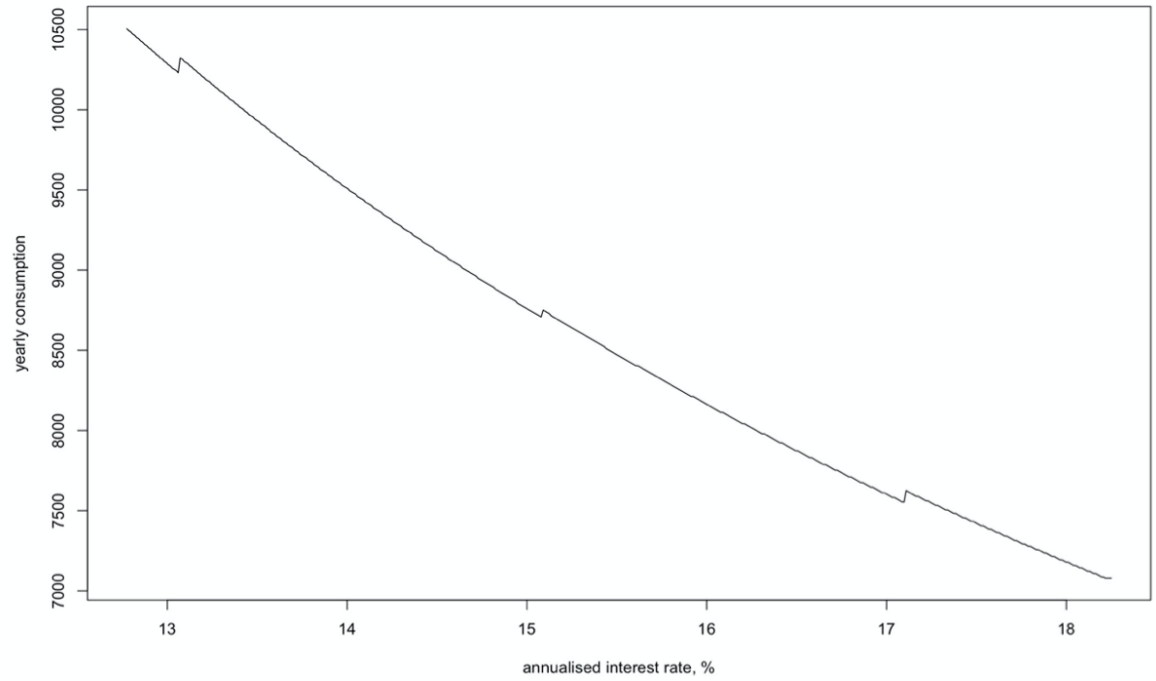

Figure 11 Yearly consumption and corresponding annualised interest rate to achieve e(r, p) = 39.45

Based on profitability model, we believe that it is plausible to lower the interest rate if the green consumption amount of a customer reaches a certain level, while the current profit level is maintained.

4. Environmental Impact

4.1 Standard Chartered's Environmental focus

The UN Sustainable Development Goals (SDG) are a focus of Standard Chartered Bank (SCB). To see which existing practices Standard Chartered have already implemented to progress to these goals, the "Green and Sustainable Product Framework 2020[38]" is a key insight. SDGs that have not been covered by SCB's efforts are the following:

- SDG 2: Zero Hunger
- SDG 5: Gender Equality
- SDG 13: Climate Action
- SDG 16: Peace, Justice and Strong Institutions
- SDG 17: Partnerships for the Goals

A focus of the green credit card proposed is therefore to fill SCB's gaps in covering the goals. Out of these, the goal which can be most progressed towards by consumer spending is Goal 13: Climate Action. This goal can be moulded by SCB's aim of a low carbon future aligning with the Paris Agreements aims, especially in such a populated and polluting area as the Greater Bay Area.

[38] Standard Chartered, "Green and Sustainable Product Framework 2020"
https://av.sc.com/corp-en/others/green-sustainable-product-framework.pdf

Further, to reach 2 more of these uncovered goals, there is the option to emulate the Barclaycard 'Breathe' card by donating a small fraction of the profits to charities such as women's charities and wrongful conviction charities, covering Goals 5 & 17. This would help deal with problems still encountered in a highly developed area such as the Greater Bay Area.

4.2 Estimated Impact of Green Credit Cards

The Korean Green Credit Card scheme[39], introduced in section 2.2, was implemented between July 2011 and December 2016. In the period of implementation, the number of issued cards exceeded 15 million, which is equivalent to 55% of the economically active population of Korea. As UNFCCC has reported, "It is estimated that about 2.5 million tonnes of CO2 equivalent emissions have been reduced between the onset of the program in July 2011 and December 2016. A total of 1.46 million tons of GHGs emission reductions have been achieved through the promotion of public transportation use, energy savings in electricity, gas, and water at home. The Green Credit Card directs people's consumption patterns towards a low-carbon lifestyle and sustainability."

For more relevant evidence pertaining to the Greater Bay Area, data from the China Industrial Bank (CIB)[40] with relation to their green card scheme shows an optimistic trend.

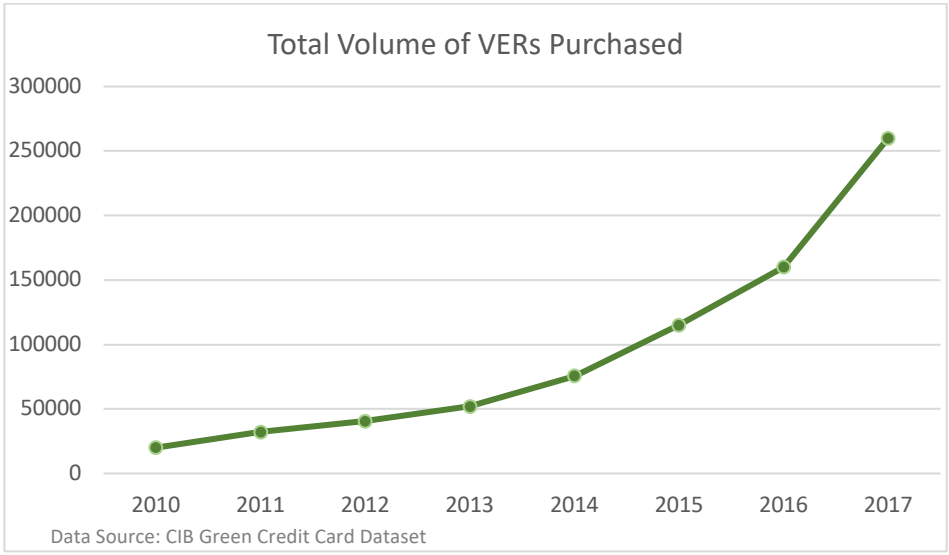

Figure 12 Total Volume of VERs Purchased by CIB

The amount of VER purchased has seen high increases since 2010, with 260 thousand tonnes purchased as of 2017 leading to a cumulative of 750 thousand tonnes. In total, 2.6 million cards have been issued.

From this, we can infer that schemes of this nature work as shown by their success within China and one of its neighbouring countries. In conclusion, we believe our green credit card scheme will be a profitable venture for Standard Chartered, yielding real results for both sustainable development in the Greater Bay Area, and the sustainable finance industry as a whole.

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[39] UNFCCC, "Green Credit Card I Republic of Korea"
https://unfccc.int/climate-action/momentum-for-change/ict-solutions/green-credit-card-i-republic-of-korea

[40] CIB, "Green Credit Card Data"
Dataset obtained from http://www.csmar.com